

Current FD Status

Last week and early this week were dominated by cable and connection checks at Ash River.

Most of the daytime running was with a partial detector.

Overnight running was smooth after the detector was returned to running each night.

Saturday Night/Sunday morning at 01:40 the power glitched twice at Ash River due to severe weather. Required callin.

Final recovery took a few hours as it was handed between a few people due to travel and other issues surrounding the collaboration meeting. Timing expert, DAQ expert, APD Experts, and finally back to shifter. Once cooled the data taking resumed in the evening. @20:30

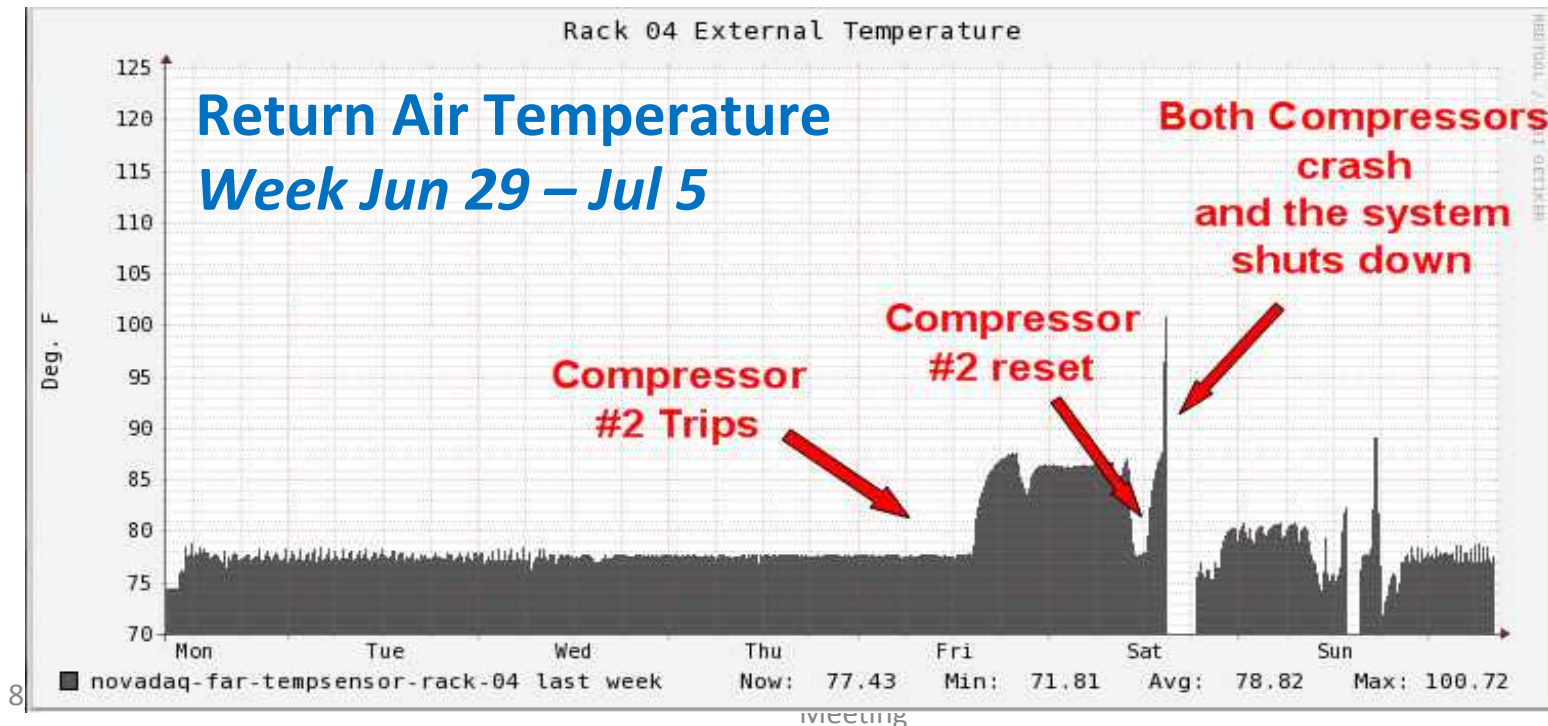
NOvA AEM Shutdown Report

Rob Plunkett

8/3/2015

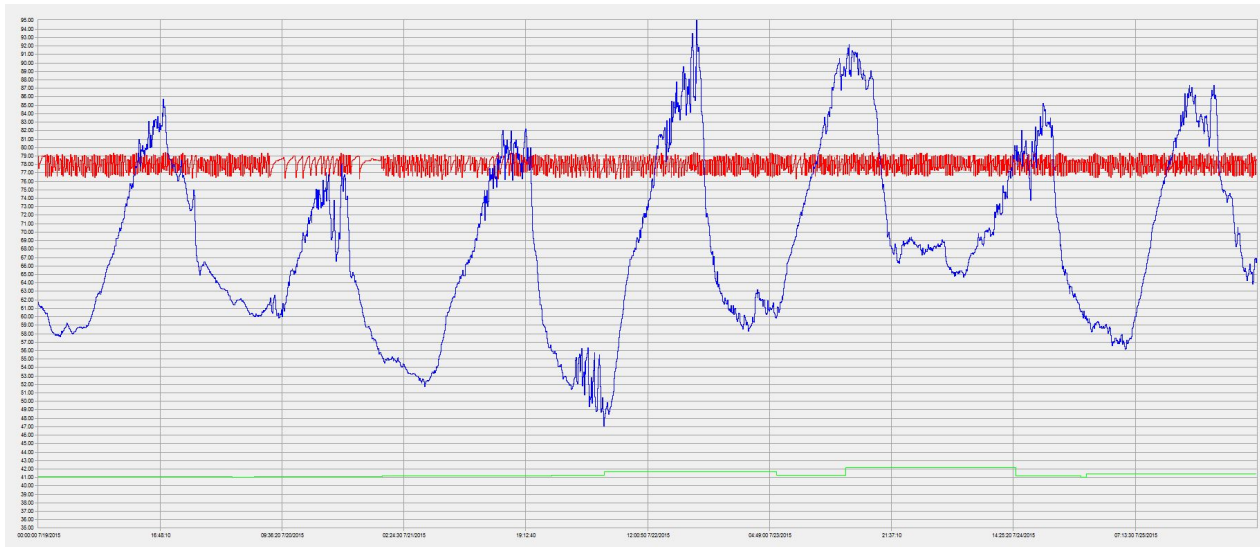
Operations – HVAC: the crucial Issue

- a) HVAC in computer room is just at edge of what is needed
- b) Over-temperatures caused compressor trips (Feb 18/19, Mar 12, May 3, May 22/23, Jun 9 and Jul 4/5)



Shutdown-Computer Room Cooling

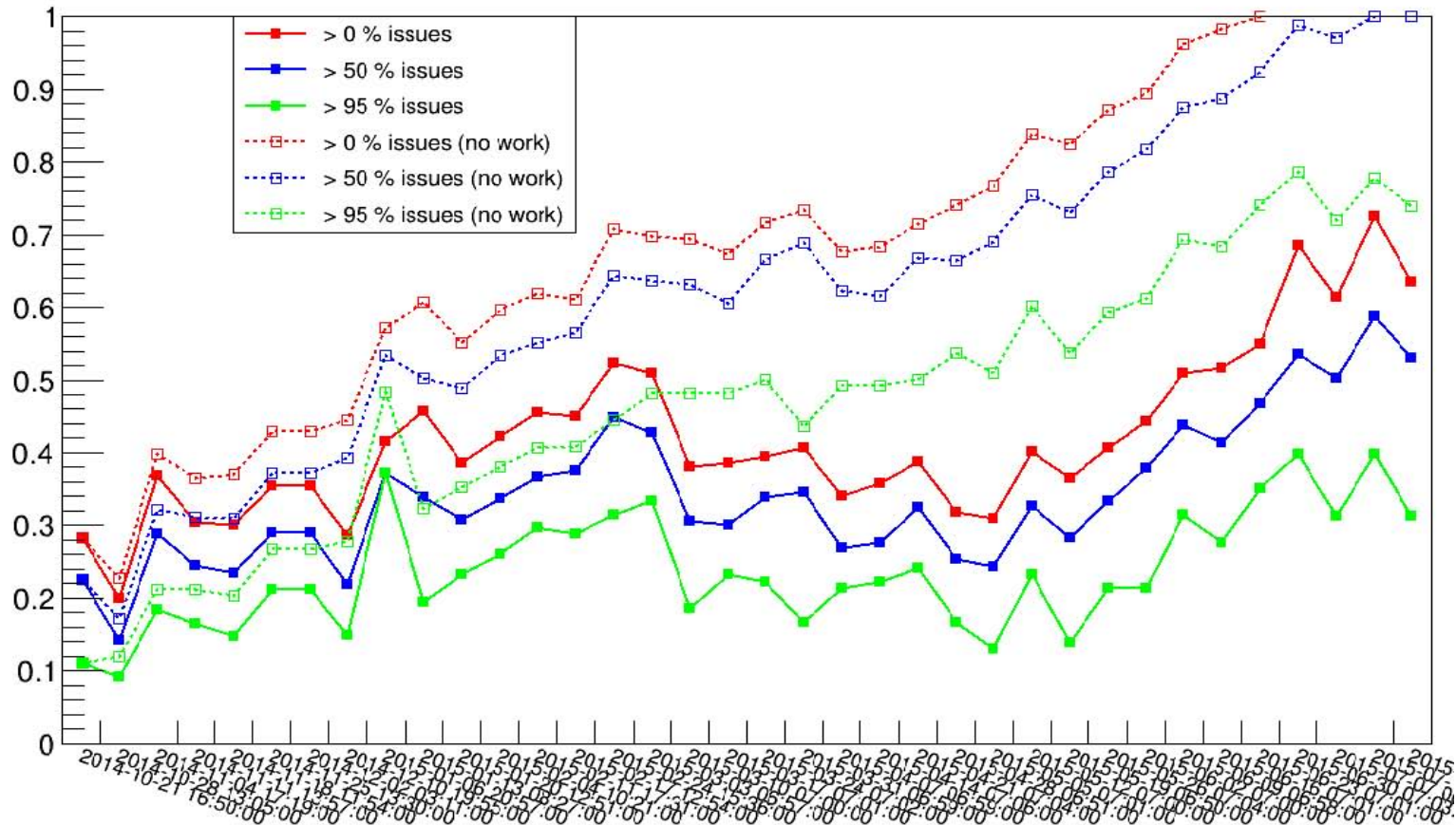
- After complete overhaul of CRU1 we have been running extremely smoothly!
- Have measured wattage of racks to know where we are
- Planning for fully loaded, heavily running test.
- FESS completing plans for upgrade if needed.



- Even with outside temperatures in the low 90's the return air has been stable averaging 78F

Detailed Performance Metrics

Percent of Issue Channels (Week of July 21 2015)



0.7% and dropping

Mass Cable Check

- (1) APD found with loose surface resistor.
- (2) Com cables were found plugged into incorrect ports on DCM's.
- (10) Com cables were identified as bad using Fluke Cable Tester.
- (22) Loose grounding wires were found on either the FEB and/or APD.
- (38) TEC power wires were found either touching or laying on APD ribbon tape.
- Found a poor ground at Catwalk connection on DiBlock 5. May help with transient channel dropouts.

Shutdown-DCMul8tor

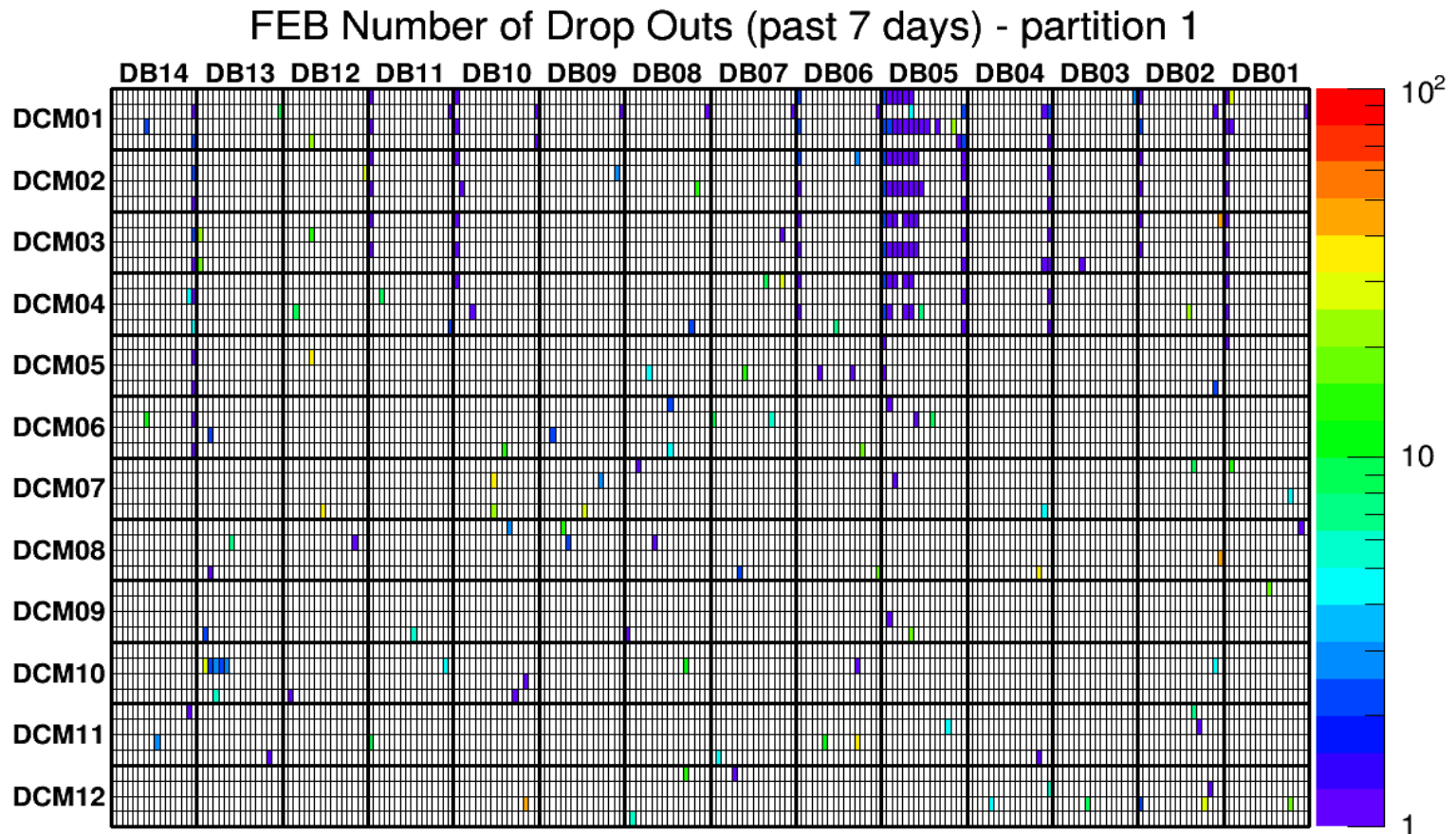
- DCMul8tor (Hand held DSO scanner) which allows us to look at a single output commissioned
- Able to identify and fix several different noise problems on diblock 14
- Ongoing work

Shutdown-Additional Work

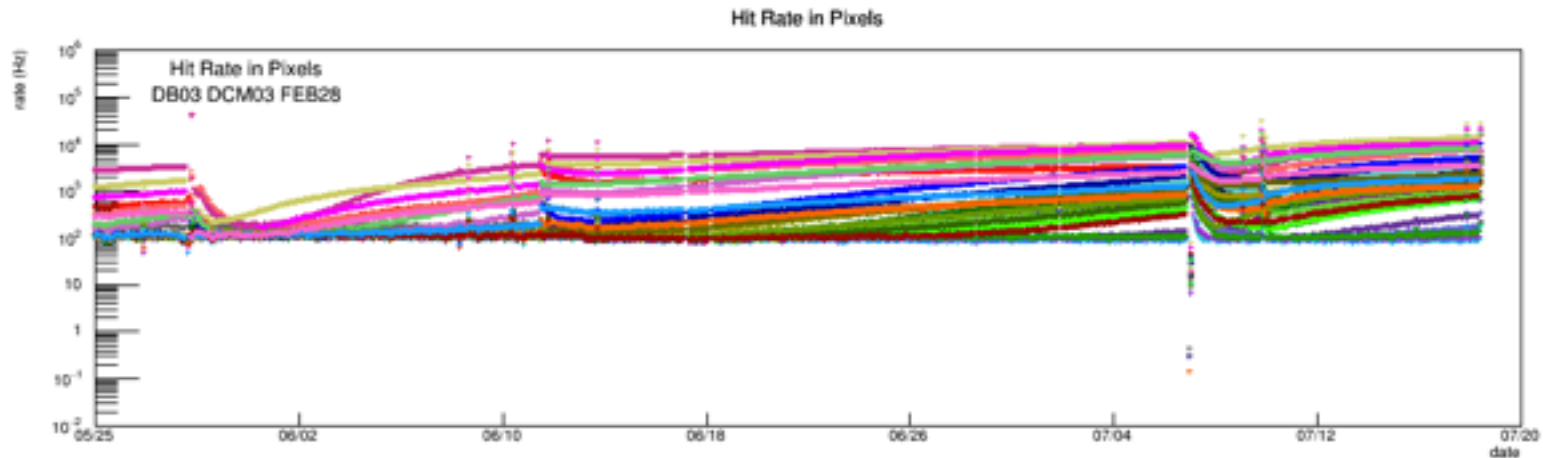
- Dry Gas System
 - Replace bad rotary valves
 - Rebuild and test compressor #2
- Chilled Water System
 - Clean filters and traps
 - Fix small oil leak during late September HVAC maintenance
- Organize/redo network $\frac{1}{2}$ rack in mechanical room, add additional UPS backup
- UPS power-Computer room
 - Have electrician move breaker to less populated leg
 - Update PDU documentation and Rack Location information

Bad ground area

- Have observed dropouts in this region. Will watch carefully.



Near Detector Noise Issues



Earlier Version APD's on ND occasionally have gradually growing noise.

Detailed, almost automatic monitoring

40 APD/FEB's cause most of the noise. (out of 631).

About 190 with a noise issue on any pixel.

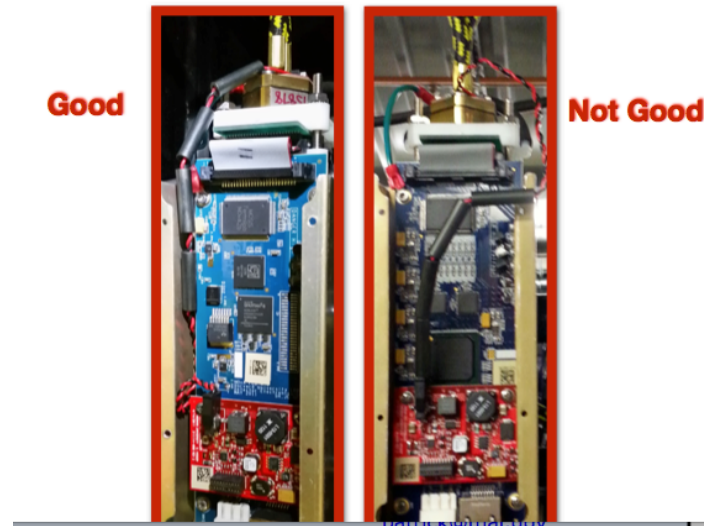
Near Detector Work

Checks on issue FEBs: All issue FEBs will be scanned for obvious hardware or connection issues.

Barcode scanning: All locations missing from the database (or incomplete) will be scanned again.

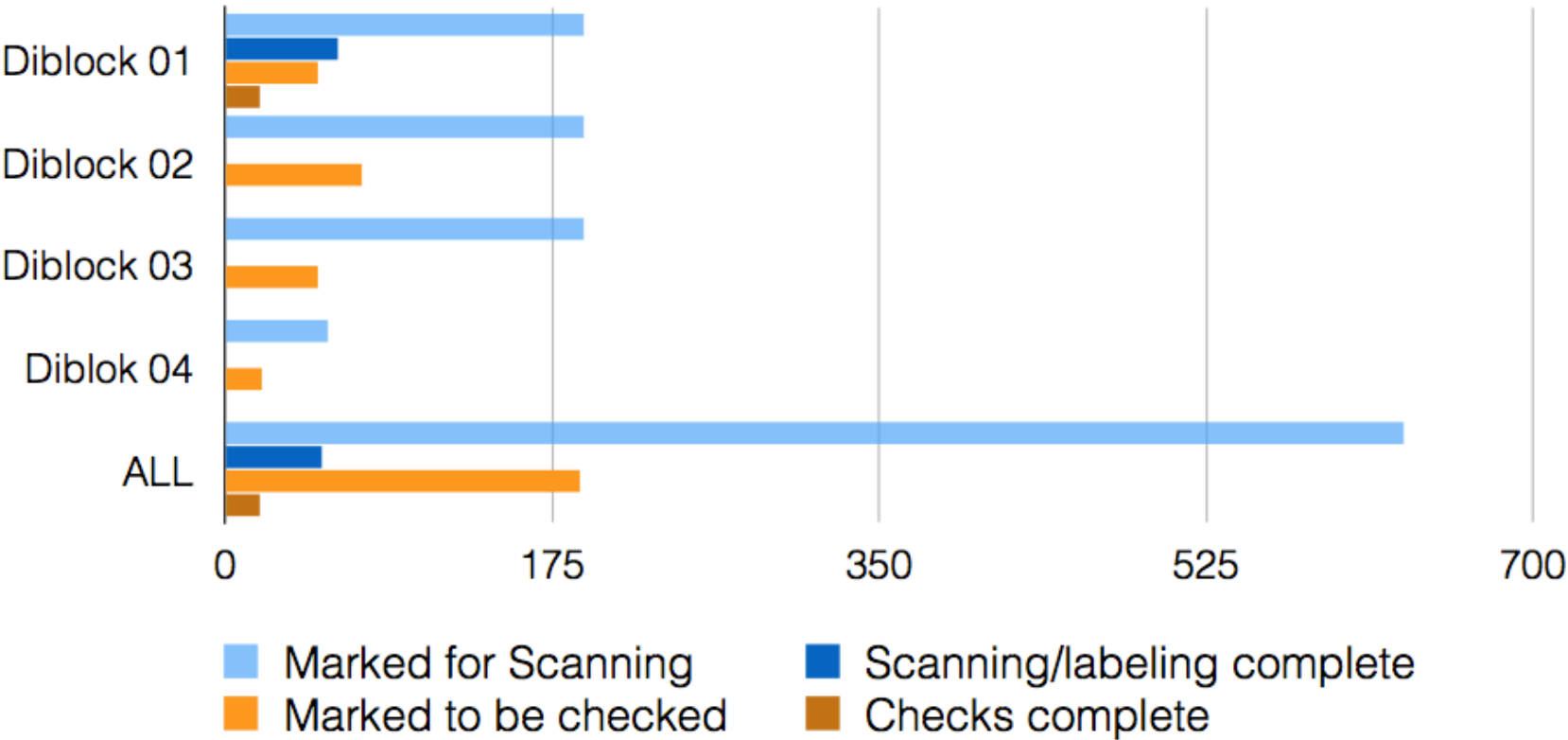
Cable Placing: All TEC to heat sink cables will be placed away from APD cables to avoid introducing noise.

TEC Relabeling: All TECs will be relabeled with new barcodes.



0.6% and dropping

NearDet Maintenance progress as of July 24th



DAQ

- Working on robustness issues
 - Occasional crashes of Applications Manager
 - Occasional timing chain issues.
 - Improved integration for user experience.
- Demonstrated long trigger readouts (successfully) up to 30 s
 - New datalogger is scheduled for the release
 - Still needs additional tuning (application and network)
 - Still needs more extensive testing
 - Pre-requisite for supernova triggering

Conclusions

- Detectors and DAQ in good shape
- Lots of optimization/maintenance going on
- Good experience for many people.
- Expect to be ready for data taking even more efficiently.